

PATENT COOPERATION TREATY

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SCIENTIFIC-ATLANTA, INC.
LEGAL DEPARTMENT

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

To:

SCIENTIFIC-ATLANTA, INC.
Attn. Lafferty, Brook W.
Intellectual Property Department
5030 Sugarloaf Parkway
Lawrenceville, GA 30044
ETATS-UNIS D'AMERIQUE

(PCT Rule 44.1)

Applicant's or agent's file reference F-10410-PC	Date of mailing (day/month/year) 09/02/2007
International application No. PCT/US2006/033965	International filing date (day/month/year) 31/08/2006
Applicant SCIENTIFIC-ATLANTA, INC.	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the International Search Report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 338.82.70

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
- ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders


Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the International Searching Authority  European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Chantal Flohr <div style="text-align: right;">✓</div>
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference F-10410-PC	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2006/033965	International filing date (day/month/year) 31/08/2006	(Earliest) Priority Date (day/month/year) 07/09/2005
Applicant SCIENTIFIC-ATLANTA, INC.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 6 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box No. II)

3. ☐ **Unity of invention is lacking** (see Box No. III)

4. With regard to the **title**,

- ☒ the text is approved as submitted by the applicant
☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- ☒ the text is approved as submitted by the applicant
☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 3

- ☒ as suggested by the applicant
☐ as selected by this Authority, because the applicant failed to suggest a figure
☐ as selected by this Authority, because this figure better characterizes the invention

b. ☐ none of the figures is to be published with the abstract

INTF IATIONAL SEARCH REPORT

International application No

PCT/US2006/033965

A. CLASSIFICATION OF SUBJECT MATTER
INV. H04N7/173

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H04N H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/097584 A (HYPERSPACE COMMUNICATIONS INC [US]) 5 December 2002 (2002-12-05)	1-16
Y	paragraphs [0019] - [0022], [0030] - [0033]	20
A	----- WO 01/77888 A2 (KONINKL PHILIPS ELECTRONICS NV [NL]) 18 October 2001 (2001-10-18) the whole document	1-16
A	----- WO 2004/100500 A2 (THOMSON LICENSING SA [FR]; GRIMES KEVIN LLOYD [US]; BURNETT ANGELA REN) 18 November 2004 (2004-11-18)	1-16
Y	the whole document	21
A	----- US 2003/174243 A1 (ARBEITER JAMES HENRY [US] ET AL) 18 September 2003 (2003-09-18) the whole document	1-16
	----- -/--	

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

Z document member of the same patent family

Date of the actual completion of the international search

1 February 2007

Date of mailing of the international search report

09/02/2007

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Bertrand, Frédéric

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2006/033965

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2005/160468 A1 (RODRIGUEZ ARTURO A [US] ET AL) 21 July 2005 (2005-07-21) cited in the application the whole document	1-16
A	US 2004/133907 A1 (RODRIGUEZ ARTURO A [US] ET AL) 8 July 2004 (2004-07-08) cited in the application the whole document	1-16
X	US 6 259 733 B1 (KAYE JAMES E [US] ET AL) 10 July 2001 (2001-07-10)	17-19, 28-30
Y	column 7, lines 54-66	20,21
X	WO 2004/091219 A (KONINKL PHILIPS ELECTRONICS NV [NL]; WOOD KARL J [GB]; OWLETT TIMOTHY) 21 October 2004 (2004-10-21)	22,23
A	page 4, line 6 the whole document	24-27
X	US 2003/219228 A1 (THIAGARAJAN BALAJI [US] ET AL) 27 November 2003 (2003-11-27) figure 5	22,23
A	US 2003/221194 A1 (THIAGARAJAN BALAJI [US] ET AL) 27 November 2003 (2003-11-27) the whole document	22-32
A	US 5 721 829 A (DUNN MATTHEW W [US] ET AL) 24 February 1998 (1998-02-24) the whole document	22-27
X	EP 1 069 801 A1 (IBM [US]) 17 January 2001 (2001-01-17) the whole document	33-44
A	US 2003/074214 A1 (KELLIHER TIMOTHY L [US]) 17 April 2003 (2003-04-17) the whole document	33-44

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2006/033965

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-16

optimizing bandwidth utilization to a television subscriber premises, depending on the subscriber terminal capabilities, especially the display

2. claims: 17-32

optimizing bandwidth utilization to a television subscriber premises, depending on the program content type or theme (e.g. sports, cartoon)

3. claims: 33-44

optimizing bandwidth utilization to a television subscriber premises, by selecting and assessing the different communication paths available

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2006/033965

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 02097584	A	05-12-2002	NONE	
WO 0177888	A2	18-10-2001	AT 338307 T JP 2003533712 T US 2001039572 A1	15-09-2006 11-11-2003 08-11-2001
WO 2004100500	A2	18-11-2004	BR PI0410034 A CN 1784859 A EP 1620975 A2 JP 2006525771 T KR 20060038924 A	25-04-2006 07-06-2006 01-02-2006 09-11-2006 04-05-2006
US 2003174243	A1	18-09-2003	NONE	
US 2005160468	A1	21-07-2005	CA 2554208 A1 WO 2005071658 A1	04-08-2005 04-08-2005
US 2004133907	A1	08-07-2004	US 6986156 B1 US 2005071882 A1	10-01-2006 31-03-2005
US 6259733	B1	10-07-2001	US 2001014121 A1	16-08-2001
WO 2004091219	A	21-10-2004	NONE	
US 2003219228	A1	27-11-2003	NONE	
US 2003221194	A1	27-11-2003	NONE	
US 5721829	A	24-02-1998	NONE	
EP 1069801	A1	17-01-2001	DE 69920893 D1 DE 69920893 T2 US 6765873 B1	11-11-2004 09-03-2006 20-07-2004
US 2003074214	A1	17-04-2003	US 2003074480 A1	17-04-2003

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US2006/033965

International filing date (day/month/year)
31.08.2006

Priority date (day/month/year)
07.09.2005

International Patent Classification (IPC) or both national classification and IPC
INV. H04N7/173

Applicant
SCIENTIFIC-ATLANTA, INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office - Gitschiner Str. 103
D-10958 Berlin
Tel. +49 30 25901 - 0
Fax: +49 30 25901 - 840

Date of completion of
this opinion

see form
PCT/ISA/210

Authorized Officer

Bertrand, Frédéric

Telephone No. +49 30 25901-406



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2006/033965

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - ☒ the international application in the language in which it was filed
 - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ on paper
 - ☐ in electronic form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in electronic form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2006/033965

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has, within the applicable time limit:
- ☒ paid additional fees
 - ☐ paid additional fees under protest and, where applicable, the protest fee
 - ☐ paid additional fees under protest but the applicable protest fee was not paid
 - ☐ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☒ all parts.
 - ☐ the parts relating to claims Nos.

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-44
Inventive step (IS)	Yes: Claims	
	No: Claims	1-44
Industrial applicability (IA)	Yes: Claims	1-44
	No: Claims	

2. Citations and explanations

see separate sheet

This Authority considers that there are 3 inventions covered by the claims indicated as follows:

- I: Claims 1 to 16 directed to optimizing bandwidth utilization to a television subscriber premises, depending on the subscriber terminal capabilities, especially the display
- II: Claims 17 to 32 directed to optimizing bandwidth utilization to a television subscriber premises, depending on the program content type or theme (e.g. sports, cartoon)
- III: Claims 33 to 44 directed to optimizing bandwidth utilization to a television subscriber premises, by selecting and assessing the different communication paths available

The reasons for which the inventions are not so linked as to form a single general inventive concept, as required by Rule 13.1 PCT, are as follows:

The prior art has been identified as general knowledge and discloses: general purpose of optimizing scarce resources, in this case bandwidth.

Subject 1: It follows that the following technical feature of claims 1 to 16 make a contribution over the prior art and can be considered as a special technical feature within the meaning of Rule 13.2 PCT:

- ascertaining display attributes

The problem solved by this special technical feature can therefore be construed as:
optimize bandwidth depending on terminal capabilities

Subject 2: It follows that the following technical feature of claims 17 to 32 make a contribution over the prior art and can be considered as a special technical feature within the meaning of Rule 13.2 PCT:

- ascertaining content type

The problem solved by this special technical feature can therefore be construed as:
optimize bandwidth depending on content

Subject 3: It follows that the following technical feature of claims 33 to 44 make a contribution over the prior art and can be considered as a special technical feature within the meaning of Rule 13.2 PCT:

- tracking bandwidth utilization on multiple links

The problem solved by this special technical feature can therefore be construed as:
optimize bandwidth in a system with multiple links

Also, examining the possible correspondence by technical effect, one finds that

- **Subject 1**: the technical effect of the first invention is to adapt the bandwidth to the display type,
- **Subject 2**: that the technical effect of the second invention is to adapt the bandwidth to the content type
- **Subject 3**: and that the technical effect of the third invention is to find the most appropriate path for transport

This appears to show lack of corresponding technical effect as well. Consequently, neither the objective problem underlying the subjects of the claimed inventions, nor their solutions defined by the special technical features allow for a relationship to be established between the said inventions, which involves a single general inventive concept.

In conclusion, the groups of claims are not linked by common or corresponding special technical features and define **3 different inventions** not linked by a single general inventive concept.

The application, hence does not meet the requirements of unity of invention as defined in Rules 13.1 and 13.2 PCT.

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

A. WRITTEN OPINION FOR THE FIRST INVENTION CLAIMS 1-16

Reference is made to the following document:

D1: WO 02/097584 A (HYPERSPACE COMMUNICATIONS INC [US]) (2002-12-05)

----- [lack of novelty] -----

A.1. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

The document D1 discloses (the references in parentheses applying to this document): optimizing bandwidth by adapting the stream depending on display characteristics (see e.g. D1, paragraph 30). The subject matter of claim is broad enough to embrace the disclosure of D1, and is therefore not new.

----- [dependent claims, negative assessment] -----

A.2. Dependent claims 2 to 16 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, see document D1 and the corresponding passages cited in the search report.

B. WRITTEN OPINION FOR THE SECOND INVENTION CLAIMS 17-32

Reference is made to the following document:

D1: WO 02/097584 A (HYPERSPACE COMMUNICATIONS INC [US]) (2002-12-05)

D3: WO 2004/100500 A2 (THOMSON LICENSING SA [FR]; GRIMES KEVIN LLOYD [US];
BURNETT ANGELA REN) 18 November 2004 (2004-11-18)

D7: US 6,259,733 B1 (2001-07-10)

D8: WO 2004/091219 A (2004-10-21)

----- [lack of novelty] -----

B.1.1. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claim 17** is not new in the sense of Article 33(2) PCT.

The document D7 discloses : adapting bandwidth (variable bit rate encoding and statistical multiplexing, abstract) based upon content type (depending on source parameters like spatial activity, abstract). A football match program would for instance naturally have more spatial activity than weather report program, which can be traced either automatically or manually. The scope of claim 17 is broad enough to embrace the disclosure of D7 and is therefore not new.

B.1.2. The same applies to the subject matter of **claim 28**.

B.1.3. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claim 22** is not new in the sense of Article 33(2) PCT.

The document D8 discloses a method for optimizing data rates, which, when a signal, being recorded and watched, is stopped being watched (in the case of D8 because of signal corruption), completes the recording by non real time download (replacement portions via second communication channel, abstract; non real time, page 4 line 6). The scope of claim 22 is broad enough to embrace the disclosure of D8 and is therefore not new.

----- [dependent claims, negative assessment] -----

B.2.1. Dependent **claims 18 to 19** do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty, because they are also disclosed in D7 (see passages cited in the search report).

B.2.2. The subject matter of **claim 20** is a mere juxtaposition of claim 17 and claim 1, without a surprising effect, and is therefore not inventive (see disclosure of D1 and D7).

B.2.3. The same applies to the subject matter of **claim 21** with juxtaposition of D7 and D3.

B.2.4. Dependent **claims 29 to 32** do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of

novelty and/or inventive step, see document D8 and the corresponding passages cited in the search report.

C. WRITTEN OPINION FOR THE SECOND INVENTION CLAIMS 33-44

Reference is made to the following document:

D12: EP 1069801 A1 (20021-01-17)

----- [lack of novelty] -----

C.1.1. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claim 33** is not new in the sense of Article 33(2) PCT.

The document D12 discloses : bandwidth evolution by monitoring oversubscription in one to many distribution. The independent claim 33 is broad enough to embrace the disclosure of D12, and the subject matter of **claim 33** is therefore not new.

C.1.2. The same applies to independent **claim 42**.

----- [dependent claims, negative assessment] -----

C.2. Dependent **claims 34 to 41 and 43 to 44** do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, see document D12 and the corresponding passages cited in the search report.

F.Bertrand